A SURVEY ON HEALTH RELATED QUALITY OF LIFE BETWEEN OFFICE GOING WOMEN AND HOUSEWIVES OF INDIA

SHORT SYNOPSIS

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I hereby declare that the short synopsis **"A SURVEY ON HEALTH RELATED QUALITY OF LIFE BETWEEN OFFICE GOING WOMEN AND HOUSEWIVES OF INDIA"** being submitted in partial fulfillment of the requirement for the degree of Doctor of Philosophy in Physical Education under Department of Health Sciences of Lakshmibai National Institute of Physical Education, Gwalior during the academic year 2022- 2023.

It is a bonafide record of original work carried out under the supervision of Dr. Sanjeev Yadav and has not been submitted in full or part to any other university or institute for a degree or diploma.

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ABSTRACT

This investigation is designed to evaluate and contrast the health-related quality of life (HRQoL) of office-going women employed in the educational sector and housewives residing in India. Through simple random sampling, a total of 2000 married women aged 31–50 years were selected and categorized into four equal groups based on their age and employment status, utilizing a cross-sectional survey design. The eight domains of physical and mental health were assessed using the SF-36 Health Survey, while obesity-related indicators were evaluated using the waist-to-hip ratio and body fat percentage. The primary goals were to assess the intersection of sedentary behavior and burden with differences in physical and mental health dimensions, obesity parameters, and their interrelationships. The results of this study are anticipated to emphasize substantial health disparities that are influenced by occupational roles and lifestyle, providing a unique perspective on the increasing prevalence of obesity and lifestyle-related disorders among Indian women. The results may be used to inform health promotion strategies and interventions that are specifically designed for the unique occupational and domestic environments of women.

Key words: wellness, body fat percentage, waist-to-hip ratio, health-related quality of life, office-going women, housewives, sedentary lifestyle.

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1. INTRODUCTION

The concept of health has been of immense importance to humanity throughout history. The concept of "health" is profoundly rooted in the concepts of completeness, soundness, and well-being. The word's linguistic origins can be traced back to the ancient Germanic term “hailiz”, which is related to Old English “hael” and Old High German “heil”. These terms all convey the concept of wholeness. Medical comprehension developed over time, particularly from the 16th century onward. The late 19th century saw the emergence of a medical paradigm that primarily defined health as the absence of illness, with a focus on pathology, cell physiology, and microbiology, which was influenced by the rise of anatomical studies (Huber, 2014).

Conversely, contemporary health concepts—particularly those that prioritize "Health for All"—offer a more inclusive viewpoint. The World Health Organization (WHO, 2005) defines health as a state of complete physical, mental, and social well-being, rather than solely the absence of disease. The biomedical model posits that health is the proper functioning of the body, while the psychosocial model takes into account psychological and social influences. The ecological model emphasizes the equilibrium between individuals and their environments, and the holistic model integrates physical, mental, familial, and environmental well-being (K. Park, n.d.). Various frameworks have been developed to describe this complex, dynamic state.

Wellness, which is frequently associated with physical health, is actually a more comprehensive concept that encompasses mental and spiritual aspects as well. A balanced lifestyle, which encompasses appropriate nutrition, physical activity, emotional regulation, mental stimulation, and spiritual fulfillment, is essential for achieving true wellness. A person's overall quality of life is influenced by their social, emotional, intellectual, vocational, environmental, spiritual, and financial wellness. Wellness is a multifaceted endeavor as a result of these interconnected dimensions, which reflect the manner in which individuals interact with the world and themselves (Stoewen, 2017; Maryland, 2017; Wellness, 2021).

Health outcomes are significantly influenced by gender as a result of both biological and socio-cultural disparities. Women are particularly susceptible to health inequities that stem from societal norms and expectations. The physical and mental health of numerous contemporary women is significantly impacted by the pressure of balancing professional obligations with domestic responsibilities (Mehfooz Ahmed, 2018). Furthermore, women's empowerment and well-being are still being impeded by economic disparities, including unequal access to property and income (Andal, 2002). Research suggests that housewives experience a higher incidence of chronic conditions and report inferior health than employed women. This disparity is likely due to increased domestic stress and limited social engagement (Fletcher et al., 2017; Waldron, 1980; Krantz, 2000).

Health-related quality of life (HRQoL) is a comprehensive assessment of an individual's holistic well-being, which encompasses physical, emotional, mental, and social dimensions. It is substantially different among individuals based on life circumstances and priorities, and it is influenced by a variety of personal, environmental, and economic factors (Felce & Perry, 1995; Ravens-Sieberer et al., 2006; Karimi & Brazier, 2016). Limited research exists on the comparative health status of employed and unemployed women in specific regions of India, despite the growing interest in HRQoL.

In order to resolve this gap, this study examines the disparities in HRQoL between office-going women and housewives in India. Its objective is to determine which demographic is more susceptible to health problems associated with lifestyle and to investigate the influence of sedentary behavior and work-related stress on the well-being of women.

2. LITERATURE REVIEW

The research scholar made sincere efforts to locate and collect the literature pertinent to the study, and she pushed herself to the limit. This chapter has presented the accumulated material in the form of a literature review.

Oguntibeju et al. (2010) evaluated the correlation between body mass index (BMI) and physical activity levels among preclinical medical students. Two hundred fifty questionnaires were disseminated, with 194 accurately completed, for a response rate of 78%. The BMI was computed using self-reported height and weight measurements. The findings indicated that 20.1% engage in over seven hours of physical activity weekly. Twenty-four respondents (14.4%) reported being smokers, whereas ninety-four respondents (48.5%) claimed that they drank alcohol. The average BMI of the pupils was 21.9 kg/m^2. This study indicates that students engage less in structured physical activity.

Luoto R & Moilanen et al. (2012) conducted an experimental investigation to ascertain the significance of physical exercise. The objective of the study was to assess the impact of aerobic training on the frequency of hot flushes and quality of life. A randomized controlled trial design was employed, using sedentary symptomatic women aged 43 to 63 years as subjects for the investigation. The intervention regimen comprised unsupervised aerobic training for 50 minutes, conducted four times weekly over a duration of six months. The study employed the Women's Health Questionnaire (WHQ), Health-Related Quality of Life (HRQOL, SF-36), a phone-based diary for daily reported hot flushes, cardio-respiratory fitness (CRF), and body composition assessments. The intervention group in the study exhibited a more significant decrease in the frequency of nocturnal hot flushes as recorded in the phone diary, although this was not reflected in the WHQ scale. The intervention group had a lower level of depressive mood compared to the control group, as indicated by the change in WHQ score. The alterations in WHQ scores related to depressive mood and menstruation symptoms in the intervention group were significantly influenced by the frequency of training sessions. The intervention group women exhibited enhancements in physical functioning and physical role ratings regarding HRQOL. Cardiorespiratory fitness (CRF) improved, and lean muscle mass significantly increased in the intervention group compared to the control group. The research determined that aerobic exercise may reduce the incidence of hot flashes and enhance the quality of life in mildly overweight women.

Anita Nagar (2015) investigated the correlation between Health Related Physical Fitness (HRPF) and Health Related Quality of Life (HRQoL) in female college students between the ages of 17 and 23. In this study, 500 students were randomly selected, with 250 being classified as physically active and 250 as sedentary. Body composition measurements (triceps skin fold, suprailiac skin fold, abdomen skin fold), cardio-respiratory endurance (1-mile run/walk), muscular strength (modified push-ups test), muscular endurance (sit-ups test), and

flexibility (sit and reach test) were employed to evaluate physical fitness. The SF-36 questionnaire, which included 40 responses, was employed to assess HRQoL. The collected data was analyzed using descriptive statistics, and the relationship between HRQoL and physical activity among the female pupils was determined using Pearson product-moment correlation. Female college students who were physically active exhibited higher levels of physical fitness and dimensions of HRQoL. In physically active students, positive relationships were observed between specific subscales of HRQoL and components of HRPF**.**

Haraldstad, K., Wahl, A., Andenæs, R. et al., (2019), The results of their systematic snapshot review demonstrated that QOL research is genuinely international, involves a diverse range of target groups, and employs a variety of research designs and QOL measures. They contended that this can be attributed to cultural differences, as well as socioeconomic and political circumstances, including distinct philosophical foundations and sets of values. It is conceivable that the concept of QOL is interpreted differently in various cultures, and the relevance of the cross-cultural context is uncertain. Consequently, it is worthwhile to conduct additional qualitative research on quality of life (QOL) in Asian and other non-Western cultures in order to gain a comprehensive understanding of QOL and its manifestation within a cross-cultural context. Our cursory assessment indicates that the circumstances are evolving and that research on quality of life (QOL) is expanding in China.

Cramer et al. (1990), investigated the correlation between moderate exercise (three 30-minute sessions per week) and the subject. The psychological well-being and affective state of 35 sedentary, middle-obese, and physically active women were examined. These women were categorized as sedentary (N=18) and physically active (N=17). Exercise training did not exhibit a significant correlation with mood state scores. The results of these data were consistent with those of other studies that have reported an enhancement in general psychological well-being through exercise training.

Bize & Johnson et al, 2007, conducted a systematic evaluation on the health-related quality of life and physical activity level of the general adult population. There is a lack of knowledge regarding the relationship between health-related quality of life and physical activity levels in the general population. A deliberate search was conducted in MEDLINE, EMBASE, CINAHL, and Psyc-INFO to identify health-related quality of life. 55 citations were determined to necessitate additional assessment from the 1426 references that were retrieved. Data extraction and analysis were conducted on fourteen studies; seven of these were cross-sectional, two were cohort, four were randomized controlled trials, and one employed a combined cross-sectional and longitudinal design. Thirteen distinct strategies for physical action appraisal were implemented. The Medical Outcome Study SF-36 survey identified the majority of health-related quality of life instruments. Cross-sectional research has consistently shown a positive correlation between health-related quality of life and self-reported physical activity. The adjusted odds ratio of "having 14 or more unhealthy days" during the previous month was 0.40 (95% Confidence Interval 0.36–0.45) for those meeting recommended levels of physical activity compared to inactive subjects, according to the largest cross-sectional study. The randomized controlled preliminaries and companion considers tended to show a positive impact of physical activity on health-related quality of life. However, they were subject to methodological constraints, similar to the cross-sectional investigations. The cross-sectional data of the study demonstrated a consistent positive correlation between health-related quality of life and physical activity level. It is impossible

to make a definitive statement regarding the nature of this association due to the scarcity of evidence from randomized controlled trials and cohort studies.

Vara (1989) posits that obesity can be regarded as either a consequence or a cause of physical activity and inactivity. However, the data does not provide significant support for either direction of influence, as there has been no consistent association between obesity and physical activity in women in studies.

Chow (2005), compared the physical fitness of Hong Kong adolescents with and without intellectual disability (ID) in terms of health. A stratified, random sample of 457 adolescents with mild ID (272 boys, 185 girls, CA 6–18 years) participated in a 6/9-minute run, sit-up, sit-and-reach, and sum of skin fold evaluations. The fitness data for adolescents who did not possess identification were obtained from norms that had been previously established. Despite the fact that there were few differences in physical fitness between Hong Kong youth with and without ID, both groups appeared to be exceedingly unfit in comparison to their peers in other developed countries.

Hattiwale et al. (2008), The objective of this study was to assess the BMI and physical fitness index (PFI) of healthy subjects in the early and late stages of their youth in the northern interior of Karnataka, India. Additionally, the intention was to determine the impact of BMI on PFI in the same subjects, as this area has been least explored by competent researchers. The study selected twenty-five young, healthy adults between the ages of 17 and 21 as Group I and fifteen young, healthy adults between the ages of 29 and 40 as Group II. The findings suggest that there was no correlation between BMI and PFI score, while a positive correlation was observed between BMI and waist-hip ratio in both age groups.

Shahana et al. (2009), The impact of a 12-week aerobic exercise program on health-related physical fitness components was assessed in the Karyavattompanchayath of Trivandrum district in Kerala state, between the ages of 23 and 45. For a period of 12 weeks, the experimental group participated in aerobic exercise training three times per week. No significant changes were observed in any of the selected variables in the control group. The results of this study indicate that the experimental group of middle-aged women experienced enhanced cardio-respiratory endurance, flexibility, muscular strength endurance, and a reduction in skin fold thickness (body fat %) as a result of 12 weeks of aerobic training.

Kinge and Moris (2010) examined the correlation between health-related quality of life (HRQL) and obesity, as well as the potential variation of this connection by socioeconomic status (SES). Data were obtained from four iterations of the Health Survey for England (2003–2006; n = 33,716) for individuals aged 16 and older. Obesity exhibited a negative correlation with health-related quality of life (HRQL). The adverse effects of obesity were more pronounced in those from lower socioeconomic status groups.

Mak Kwok-Kei et al. (2010) investigated the correlations between self-esteem, body image, and health-related behaviors in a sample of 267 female and 156 male first-year college students. The results indicated that the women possessed a diminished body image. Ultimately, for both genders, enhanced physical fitness and health-related activities were favorably correlated with self-esteem and body image.

Mak et al. (2010) examined the correlation between adolescent weight status and health-related physical fitness in 3,204 Hong Kong pupils between the ages of 12 and 18. The four physical fitness tests were substantially positively correlated in both sexes, while BMI was only weakly correlated with the sit-up and 9-minute run in both sexes.

Kordi et al. (2010) investigated the age-related decline in health-related physical fitness and normative data among healthy women aged 20-60 in Tehran, Iran. In this cross-sectional investigation, 1000 healthy women between the ages of 20 and 60 were randomly selected from the northern, southern, eastern, western, and center regions of Tehran. The Ros and Jakson protocol was employed to assess cardiovascular fitness. The Jackson and Poolak procedure was employed to measure body composition, followed by the sit-and-reach test to determine flexibility, the standard dynamometer to measure muscular strength, and the sit-ups test to measure muscular endurance in one minute. In the 20 and 30 year old age categories, the results suggest that cardiovascular fitness (VSo2max), body composition, flexibility, muscular strength, and endurance remained unaltered. Cardiovascular fitness, muscular strength, and endurance began to progressively deteriorate at approximately the age of 40. However, body composition increased, and flexibility remained unaltered. Iranian women experience a more significant decline in muscular strength, endurance, and cardiovascular fitness. The results of this study can serve as a reference for clinical research in a variety of age categories.

Agrawal & Gupta et. al (2014), conducted a follow-up study of 325 women, who were selected from the Delhi samples of the Indian National Family Health Survey (NFHS-2/1998–99). The women were reinterviewed after four years (2003) to assess their health status in relation to their body mass indices and waist-to-hip ratio (WHR). They analyzed the data. Women who were obese were five times more likely to perceive the worst health condition (OR: 4.87; $p < 0.0001$), while women with a higher WHR (>0.90) were two times more likely (OR: 1.70; $p = 0.050$). Obese women and women with a high WHR were found to have a higher incidence of arthritis, hypertension, and dyspnea. In order to alleviate the increasing burden of obesity-related health issues among Indian women, it is imperative to encourage a healthy lifestyle.

Traissac et al. (2015) conducted a cross-sectional study on the geographic and socio-economic patterns of abdominal-only obesity in Tunisia during a survey on Population Health Metrics. The study compared abdominal and overall obesity among women in a nutrition transition context. A stratified, three-level, clustered sample of 2,964 women aged 35 to 70 was employed. Total obesity was defined as a BMI of 30 kg/m2 or higher (weight/height2), and abdominal obesity was defined as a waist circumference of 88 cm or higher. We employed logistic regression to quantify the burden of obesity for both overall and abdominal obesity, as well as their association with place of habitation (urban/rural, the seven regions that make up Tunisia), as well as physiological and socio-economic cofactors. The study evaluated the relationships with the cofactors using multinomial logistic regression and estimated the prevalence of subject-level "abdominal only" obesity (AO) and "overall-only" obesity (OO). Additionally, it examined the within-subject concordance of the two obesities. The prevalence of abdominal obesity was significantly higher (60.4% [57.7-63.0]) than overall obesity (37.0% [34.5-39.6]). This was primarily due to a high proportion of AO status (25.0% [22.8-27.1]), while the proportion of OO was low (1.6% [1.1-2.2]). Except for the fact that the regional variability of abdominal obesity was significantly greater than that of overall obesity, we observed primarily comparable associations between abdominal and overall obesity and all of the cofactors. Only non-menopausal women ($P = 0.093$), lower parity women ($P = 0.061$), or worker/employees ($P = 0.038$) were somewhat less likely to be AO, and there were no adjusted associations of AO status with urban/rural area of residence ($P = 0.21$), education ($P = 0.97$), or household welfare level ($P = 0.94$). Nevertheless, there was a substantial residual adjusted regional variability of AO status (from 16.6% to 34.1%,

adjusted P < 0.0001), which may have been attributed to genetic, epigenetic, or developmental factors.

G Krantz , P O Ostergren (2000) in their study as evaluated the socioeconomic factors, employment status, and psychosocial work conditions of a rural community with 13,200 residents in the western region of Sweden. They employed a questionnaire that was most appropriate for the variables of the study for this purpose. A consistent pattern is observed when the health of men and women is compared, indicating that women have a higher prevalence of symptoms. Women frequently attest to experiencing chronic discomfort in their muscles and joints, bodily tension, and depressive symptoms among these symptoms.

Adame et al. (2001) In 1987 (n = 261) and 1997 (n = 243), investigated the correlation between self-reported physical activity levels and physical fitness scores in two college student samples. The 1997 women reported significantly more exercise than the 1987 women; women were more physically strong than men. The women of 1997 were more active than the women of 1987; however, there was no difference in the overall fitness measures of the two male samples. A consistent positive correlation between health-related quality of life and physical activity level was demonstrated by cross-sectional data. It is impossible to make a definitive statement regarding the nature of this association due to the scarcity of evidence from randomized controlled trials and cohort studies.

Dilmen, Nevit, Stretching, et al. (2009) conducted a systematic review of the data that investigated this relationship. We conducted a systematic search for keywords related to health-related quality of life and physical activity in the titles, abstracts, or indexing fields. 55 citations were determined to necessitate additional assessment from the 1426 references that were retrieved. The methodological limitations of cohort studies and randomized controlled trials were similar to those of cross-sectional studies; however, they tended to demonstrate a positive impact of physical activity on health-related quality of life.

Monroe et al. (2010) investigated the correlation between the self-perceived and measured physical fitness of college students. The Physical Self-description Questionnaire and four fitness assessments were completed by 60 students (30 males and 30 females). Self-perceived overall fitness was also found to be significantly correlated with actual body composition, cardio-respiratory

endurance, and muscular endurance. These results indicate that college students can reasonably accurately assess their own fitness in terms of four distinct health-related components.

Asztalos et al. (2010) investigated gender-specific variations in the relationship between physical activity (PA) and mental health (MH) in relation to activity intensity. Secondary analyses verified that there were substantial differences in psychological complaints between men and women during vigorous physical activity, as well as between men and women during moderate physical activity. Conversely, there were substantial differences in emotional well-being among women who exclusively engaged in strolling. It was determined that the PA–MH relationship is consistently positive in the general population, irrespective of the intensity of activity. The optimal PA intensity is high, and it addresses complaints (symptoms, palpable discomfort) in men. The PA intensity is moderate, and it addresses complaints, as well as distress (lowered mood, disturbing anxiety, and altered well-being) in women.

Boyle et al. (2010), examined the correlation between quality of life (HRQoL), physical activity (PA), diet, and overweight status in adolescents aged 11 to 18. The study included 1,771 adolescents who self-reported their physical activity and HRQoL outcomes. The correlational analysis suggests that there is minimal or no correlation between self-reported HRQoL, BMI, and moderate to vigorous physical activity. We observed no statistically significant differences between the two groups of children, those who met the recommended PA guidelines and those who did not, in any of the dimensions of the PedsQL and the EQ-5D utility score. A statistically significant difference was observed only in the EQ-5D VAS dimensions score. The HRQoL of children who self-reported a BMI of overweight to obese was substantially lower on both dimensions of the EQ-5D and every dimension of the PedsQL, with the exception of school functioning.

A Mehfooz and K Aqueel (2018) conducted a study that included 80 married women between the ages of 25 and 40. The schedule of women is particularly demanding due to the combination of office and household responsibilities, necessitating meticulous management. Being a working mother can be a difficult task to balance. Today, women endeavor to fulfill their domestic obligations and contribute to their family's income. It is essential to have a support system in place, manage time, and remain organized in order to achieve success. They are subjected to a variety of expectations and pressures in both their professional and personal lives. Data was collected using the WHOQOL-

BREF (1996) Questionnaire. Forty of the participants were married working women, while the remaining forty were caregivers from Bijnor, Uttar Pradesh. An independent t-test was implemented to evaluate the data. The findings suggested that there was no substantial disparity in physical health between married working women and homemaker. Nevertheless, the two groups exhibited substantial disparities in the areas of psychological well-being, social relationships, and the environment. This result implies that, despite the fact that both groups of women exhibited comparable levels of physical health, there were substantial disparities in their psychological well-being, social interactions, and environmental perceptions. Additional research could explore the specific factors that contribute to these disparities and their potential impact on the overall quality of life for married working women and households in Bijnor, UP.

3. DESCRIPTION OF BROAD AREA

This research is broadly classified under the categories of "Health Sciences and Physical Education," with a particular emphasis on "Health-Related Quality of Life (HRQoL) among women." There is a growing necessity to comprehend the impact of these changes on the physical, mental, and emotional well-being of women as modern lifestyles continue to evolve, particularly as they balance domestic responsibilities and professional roles. This research encompasses a variety of fields, including wellness psychology, physical fitness, gender studies, and public health.

Examining the health disparities between households and working women is especially pertinent in the Indian context, where socio-cultural expectations and gender roles significantly influence lifestyle choices. The research underscores the importance of critical wellness dimensions, including emotional resilience, physical functioning, and body composition, which are vital for effective health promotion and preventive healthcare. The study endeavors to enhance comprehension of the ways in which occupational and lifestyle patterns affect the health outcomes of women in both urban and semi-urban environments by investigating HRQoL using validated tools and objective measurements (e.g., SF-36 questionnaire, waist-to-hip ratio, body fat percentage).

This field is not only pertinent but also essential for the development of targeted interventions, workplace wellness programs, and public health policies that are designed to enhance the overall quality of life and alleviate the burden of lifestyle-related diseases in Indian women.

4. RESEARCH OBJECTIVES

The problem statement, which serves as the foundation for the investigation, has established the studies objectives:

1) To assess the physical functioning of office going women and housewives.
2) To assess the role physical functioning of office going women and housewives.
3) To assess the bodily pain functioning of office going women and housewives.
4) To assess the general health functioning of office going women and housewives.
5) To assess the physical component summary (PCS) of office going women and housewives.
6) To assess the vitality functioning of office going women and housewives.
7) To assess the social functioning of office going women and housewives.
8) To assess the emotional functioning of office going women and housewives.
9) To assess the mental health functioning of office going women and housewives.
10) To assess the mental component summary (MCS) of office going women and housewives.
11) To assess if there exist the difference in body fat per cent of office going women and housewives.
12) To assess if there exist the difference in hip-waist ratio of office going women and housewives.
13) To identify if there exist a relationship between body fat percentage and health related quality of life in office going women and housewives.
14) To assess at what extent the sedentary behavior affects health related quality of life in office going women and housewives.

5. RESEARCH METHODOLOGY

5.1. Selection of Variables

Taking into consideration, Indian condition and feasibility of appropriate use of tests and tools in Indian contest, the below mentioned variables and test were selected.

Four parameters are selected to survey upon office going and homemaker women are:

i. **Physical health (includes 4 parameter)**
ii. **Mental health (includes 4 parameter)**
iii. **Body fat percentage**
iv. **Body fat distribution**

VARIBLES	TOOL
1. Body fat percentage 2. Body fat distribution	Skin fold Waist to hip ratio
Physical health status 1. Physical Functioning Scale (PF). 2. Role –Physical Scale (RP). 3. Bodily Pain Scale (BP). 4. General Health Scale (GH). (included four physical health domains)	SF-36 (Short form 36 health survey) questionnaire
Mental health status 5. Vitality Scale (VT). 6. Social Functioning Scale (SF). 7. Role –Emotional Scale (RE). 8. Mental Health Scale (MH). (included four mental health domains)	SF-36 (Short form 36 health survey) questionnaire

5.2. Administration of test

The administration of tests for this study will be conducted in a systematic and standardized manner to ensure reliability, accuracy, and consistency in data collection. The primary focus will be on assessing the **Health-Related Quality of Life (HRQoL)** and **body composition parameters** (body fat percentage and waist-to-hip ratio) among office-going women and housewives in India.

5.2.1. Pre-Test Preparation

Prior to the commencement of data collection, the following steps will be undertaken:

- **Ethical clearance** will be obtained from the institutional ethics committee.

- Written **informed consent** will be sought from each participant after providing a clear explanation of the study's purpose, procedures, and assurance of confidentiality.
- Participants will be briefed thoroughly regarding the nature of the tests and the importance of providing honest and accurate responses.

5.2.2. Tools and Instruments to Be Used

- **SF-36 Health Survey Questionnaire** will be used to assess eight domains of physical and mental health. It will be provided in a language comfortable to the participant to ensure clear understanding.
- **Harpenden Skinfold Caliper** will be used to measure skinfold thickness and estimate body fat percentage.
- **Measuring Tape** will be used to measure waist and hip circumferences, from which the waist-to-hip ratio (WHR) will be calculated.

5.2.3. Test Administration Procedure

- The SF-36 questionnaire will be administered **in person** by the researcher and trained assistants.
- Each participant will be asked to complete the questionnaire **individually** in a quiet and non-distracting environment.
- For body composition assessment:
    - **Skinfold measurements** will be taken at standard sites (e.g., triceps, abdomen, suprailiac) using the Harpenden caliper. Each site will be measured thrice, and the average value will be recorded.
    - **Waist and hip circumferences** will be measured using a non-stretchable measuring tape, with participants standing in an upright posture in light clothing. WHR will then be calculated using standard formulas.

5.2.4. Data Collection Plan

- Data will be collected from various urban and semi-urban areas of India .
- The sample of 2000 participants will be divided into four sub-groups based on age and employment status, and data collection will be conducted in phases to ensure logistical efficiency and representativeness.
- All measurements and questionnaire administration will be carried out following standardized protocols to minimize variability and measurement errors.

5.2.5. Time and Environment

- Each participant will require approximately **25–30 minutes** to complete both the questionnaire and anthropometric assessments.
- Data collection will take place in designated **community centers, educational institutions, or similar venues** that ensure privacy, comfort, and a distraction-free environment.

5.2.6. Data Handling and Management

- All completed forms will be reviewed for completeness immediately after collection.
- Data will be **coded and entered** into a secure digital database.

5.3. Research Design

A descriptive and comparative cross-sectional survey design was used to set up this study. This study design works well for finding out how different groups of people in a defined population measure and compare their health-related quality of life (HRQoL), body fat percentage, and waist-to-hip ratio. The two groups are office-going women and housewives.

Rationale for the Design

A cross-sectional design allows the researcher to collect data at a single point in time, making it ideal for identifying existing differences between groups without manipulating any variables. The descriptive component helps in portraying the general health status and lifestyle patterns of the participants, while the comparative aspect allows for evaluating statistical differences between the two groups.

Key Elements of the Research Design

- **Population**: Married women residing in India, aged between 31–50 years.
- **Sample Size**: 2000 participants, divided into four sub-groups:
    - Office-going women (31–40 years) – 500
    - Office-going women (41–50 years) – 500
    - Housewives (31–40 years) – 500
    - Housewives (41–50 years) – 500
- **Sampling Technique**: Simple random sampling will be employed to ensure fair representation of the population.
- **Type of Study**: Quantitative, non-experimental, survey-based.
- **Data Collection Tools**:
    - **SF-36 Health Survey Questionnaire** – to assess physical and mental health components.
    - **Harpenden Skinfold Caliper** – to measure body fat percentage.
    - **Measuring Tape** – to calculate waist-to-hip ratio for fat distribution.

Variables Assessed

- **Physical Health**: Physical functioning, role limitations due to physical health, bodily

pain, general health.

- **Mental Health**: Vitality, social functioning, role limitations due to emotional problems, mental well-being.
- **Body Composition**: Body fat percentage and waist-to-hip ratio.

Statistical Techniques

- **Descriptive Statistics**: Mean and standard deviation will be used to summarize the data.
- **Inferential Statistics**:
    - Independent *t*-test will be applied to compare physical and mental health indicators, as well as body composition, between the two groups.
    - Correlation analysis will be conducted to explore relationships between body fat percentage and HRQoL scores.

5.4. Data Sources and Evaluation Methods

1. Data Sources

The study will utilize both **primary** and **secondary data** to comprehensively assess the health-related quality of life (HRQoL), body composition, and related health parameters of office-going women and housewives in India.

a) Primary Data Sources

The primary data will be collected directly from the study participants using the following tools:

- **SF-36 Health Survey Questionnaire**: This self-reported questionnaire will be used to collect data on physical and mental health across eight domains: physical functioning, role-physical, bodily pain, general health, vitality, social functioning, role-emotional, and mental health.
- **Anthropometric Measurements**:
    - **Body Fat Percentage**: Assessed using skinfold measurements with a Harpenden caliper at standardized anatomical sites.
    - **Waist-to-Hip Ratio (WHR)**: Measured using a non-stretchable measuring tape to assess fat distribution.
- **Demographic Information**: Age, occupation, marital status, and lifestyle patterns will be recorded using a structured information sheet during participant registration.

b) Secondary Data Sources

Secondary data will support the research by providing background, justification, and

comparison points. These will include:

- **Published Research Articles and Journals**: Peer-reviewed studies related to HRQoL, obesity, and gender-based health disparities.
- **Reports from Government Health Surveys and Organizations**: Such as NFHS (National Family Health Survey), WHO reports, and Ministry of Health publications related to women's health in India.
- **Books and Academic Texts**: Pertinent to physical education, health sciences, wellness, and gender studies (e.g., Park's *Preventive and Social Medicine*).

2. Evaluation Methods

The evaluation and analysis of data will follow a quantitative approach, involving both descriptive and inferential statistical techniques:

a) Descriptive Statistics

- **Mean** and **Standard Deviation (SD)** will be calculated to describe the central tendency and variability of physical and mental health scores, body fat percentage, and waist-to-hip ratio across the groups.

b) Inferential Statistics

- **Independent t-tests** will be used to compare the mean values of health-related quality of life and body composition between:
    - Office-going women vs. Housewives.
    - Different age groups (31–40 and 41–50 years).
- **Correlation Analysis** will be used to evaluate the relationship between:
    - Body fat percentage and HRQoL scores.
    - Waist-to-hip ratio and specific health domains.

6. EXPECTED OUTCOME

It is expected that significant differences will be observed between office-going women and housewives in various dimensions of HRQoL. Working women may report better mental health and social functioning due to increased social interaction and economic independence, while housewives might show differences in physical health domains due to sedentary lifestyle patterns.

The study anticipates detecting significant variations in body fat percentage and waist-to-hip ratio between the two groups. Housewives, following a more sedentary lifestyle, may have higher levels of body fat and central obesity indicators compared to their working counterparts.

A negative correlation is expected between higher body fat percentage/waist-to-hip ratio and poorer health-related quality of life scores, particularly in physical functioning and vitality domains.

The study may reveal how occupational roles and associated lifestyle factors affect the health status of women, highlighting potential risks for lifestyle-related diseases in both working women and housewives.

Differences in HRQoL and body composition parameters may also vary by age group (31–40 vs. 41–50 years), providing insights into how aging interacts with lifestyle and occupational

status in influencing health outcomes.
The findings are expected to provide evidence to guide health promotion and wellness interventions tailored to the specific needs of office-going women and housewives, aiming to improve their overall quality of life and reduce the prevalence of lifestyle-related health problems.

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